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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,038	11/07/2001	Ralph B. Campbell	SUN-P6578-PIP	4604
22835	7590	01/12/2005	EXAMINER	
c/o A. RICHARD PARK, REG. NO. 41241 PARK, VAUGHAN & FLEMING LLP 2820 FIFTH STREET DAVIS, CA 95616			MANOSKEY, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2113	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/043,038		CAMPBELL ET AL.	
	Examiner		Art Unit	
	Joseph Manoskey		2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-16, 18--27, and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16, 18-27 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Frey, Jr. et al., U.S. Patent 5,201,044, hereinafter referred to as "Frey".

3. Referring to claim 1, Frey teaches a file-based transaction system that includes transaction log, this is interpreted as a method for logging file system operation (See Col. 1, lines 9-12). Frey discloses the system performing file transactions using user-inaccessible software, this is interpreted as receiving a request to perform a file system operation and making a call to an underlying file system to perform the file system operation (See Col. 3, lines 22-43). Finally Frey teaches the use of a transaction log file to keep track of the progress of all pending transactions and the log file can be used to reconstruct in case of a failure of the system, this is interpreted as logging the file system operation to a log within a log device to facilitate recovery of the file system operation in the event of a system failure before the file system operation is committed to non-volatile storage (See Col. 4, line 53 to Col. 5, line 10).

Frey also discloses the types of transactions including a distributed type of transaction that includes several nodes and each server maintains its own independent log, this is seen as each server has a log file that records all the information of the distributed transactions, which includes the transaction information that occurs on separate servers (See Col. 5, lines 53-56). This is interpreted as request to perform the file system operation is received at a primary server in a highly available system, the log is located on a secondary server that is separate from the primary server in the highly available system, and that acts as a backup for the primary server.

4. Referring to claim 2, Frey discloses the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35).

5. Referring to claim 3, Frey teaches the use of a commit procedure, this is interpreted as freezing ongoing activity and making a call to the file system to flush memory buffers to non-volatile storage, which guarantees operations are committed to non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey also teaches that all old completed transactions are discarded, this is interpreted as removing outstanding file system operations from the log (See Col. 5, lines 11-12).

6. Referring to claim 4, Frey discloses a recovery procedure that involves reading the log file, this is interpreted as upon a subsequent computer system startup examining

the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file being used to reconstruct the system, this is interpreted as replaying any file system operations from the log that have not been committed to non-volatile storage (See Col. 5, lines 4-7).

7. Referring to claim 5, Frey teaches defining the sequence of actions to be carried out in the transaction, this is interpreted as checking for dependencies between file system operations and ongoing file system operations, and if detected ensuring completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

8. Referring to claim 7, Frey teaches the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to be carried out in the transaction, this is interpreted as associating the file system operation with a transaction identifier for a set of related file system operations and wherein logging the file system operation involves storing the file system operation with the transaction identifier to the log device (See Col. 5, lines 41-43).

9. Referring to claim 8, Frey discloses logging transactions and defining the sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines 41-43). This is interpreted as determining if the file system operation belongs to a subset of file system operations that are subject to logging and if so, logging the file system operation.

10. Referring to claim 9, Frey teaches subset including operations such as parity update (See Col. 5, lines 41-43). A parity update will be deferent every time you perform the operation because the data is different, this is interpreted as the operation being non-idempotent.

11. Referring to claims 10 and 11, Frey teaches the log file spanning both volatile and non-volatile memory (See Col. 3, lines 31-32).

12. Referring to claim 12, Frey teaches a file-based transaction system that includes a transaction log and software for performing the system, this is interpreted as a computer-readable storage medium storing instructions when executed by a computer to perform a method for logging file system operation (See Col. 1, lines 9-12). Frey discloses the system performing file transactions using user-inaccessible software, this is interpreted as receiving a request to perform a file system operation and making a call to an underlying file system to perform the file system operation (See Col. 3, lines 22-43). Finally Frey teaches the use of a transaction log file to keep track of the progress of all pending transactions and the log file can be used to reconstruct in case of a failure of the system, this is interpreted as logging the file system operation to a log within a log device to facilitate recovery of the file system operation in the event of a system failure before the file system operation is committed to non-volatile storage (See Col. 4, line 53 to Col. 5, line 10).

Frey also discloses the types of transactions including a distributed type of transaction that includes several nodes and each server maintains its own independent log, this is seen as each server has a log file that records all the information of the distributed transactions, which includes the transaction information that occurs on separate servers (See Col. 5, lines 53-56). This is interpreted as request to perform the file system operation is received at a primary server in a highly available system, the log is located on a secondary server that is separate from the primary server in the highly available system, and that acts as a backup for the primary server.

13. Referring to claim 13, Frey discloses the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35).

14. Referring to claim 14, Frey teaches the use of a commit procedure, this is interpreted as freezing ongoing activity and making a call to the file system to flush memory buffers to non-volatile storage, which guarantees operations are committed to non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey also teaches that all old completed transactions are discarded, this is interpreted as removing outstanding file system operations from the log (See Col. 5, lines 11-12).

15. Referring to claim 15, Frey discloses a recovery procedure that involves reading the log file, this is interpreted as upon a subsequent computer system startup examining the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file

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being used to reconstruct the system, this is interpreted as replaying any file system operations from the log that have not been committed to non-volatile storage (See Col. 5, lines 4-7).

16. Referring to claim 16, Frey teaches defining the sequence of actions to be carried out in the transaction, this is interpreted as checking for dependencies between file system operations and ongoing file system operations, and if detected ensuring completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

17. Referring to claim 18, Frey teaches the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to be carried out in the transaction, this is interpreted as associating the file system operation with a transaction identifier for a set of related file system operations and wherein logging the file system operation involves storing the file system operation with the transaction identifier to the log device (See Col. 5, lines 41-43).

18. Referring to claim 19, Frey discloses logging transactions and defining the sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines 41-43). This is interpreted as determining if the file system operation belongs to a subset of file system operations that are subject to logging and if so, logging the file system operation.

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19. Referring to claim 20, Frey teaches subset including operations such as parity update (See Col. 5, lines 41-43). A parity update will be deferent every time you perform the operation because the data is different, this is interpreted as the operation being non-idempotent.

20. Referring to claims 21 and 22, Frey teaches the log file spanning both volatile and non-volatile memory (See Col. 3, lines 31-32).

21. Referring to claim 23, Frey teaches a file-based transaction system that includes a transaction log (See Col. 1, lines 9-12). Frey discloses the system performing file transactions using user-inaccessible software, this is interpreted as receiving a request to perform a file system operation and making a call to an underlying file system to perform the file system operation (See Col. 3, lines 22-43). Finally Frey teaches the use of a transaction log file to keep track of the progress of all pending transactions and the log file can be used to reconstruct in case of a failure of the system, this is interpreted as logging the file system operation to a log within a log device to facilitate recovery of the file system operation in the event of a system failure before the file system operation is committed to non-volatile storage (See Col. 4, line 53 to Col. 5, line 10).

Frey also discloses the types of transactions including a distributed type of transaction that includes several nodes and each server maintains its own independent log, this is seen as each server has a log file that records all the information of the distributed transactions, which includes the transaction information that occurs on

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separate servers (See Col. 5, lines 53-56). This is interpreted as the receiving mechanism is located within a primary server in a highly available system, wherein the log device is located within a secondary server that is separate from the primary server in the highly available system and acts as a backup for the primary server.

22. Referring to claim 24, Frey discloses the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35).

23. Referring to claim 25, Frey teaches the use of a commit procedure, this is interpreted as freezing ongoing activity and making a call to the file system to flush memory buffers to non-volatile storage, which guarantees operations are committed to non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey also teaches that all old completed transactions are discarded, this is interpreted as removing outstanding file system operations from the log (See Col. 5, lines 11-12).

24. Referring to claim 26, Frey discloses a recovery procedure that involves reading the log file, this is interpreted as upon a subsequent computer system startup examining the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file being used to reconstruct the system, this is interpreted as replaying any file system operations from the log that have not been committed to non-volatile storage (See Col. 5, lines 4-7).

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25. Referring to claim 27, Frey teaches defining the sequence of actions to be carried out in the transaction, this is interpreted as checking for dependencies between file system operations and ongoing file system operations, and if detected ensuring completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

26. Referring to claim 29, Frey teaches the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to be carried out in the transaction, this is interpreted as associating the file system operation with a transaction identifier for a set of related file system operations and wherein logging the file system operation involves storing the file system operation with the transaction identifier to the log device (See Col. 5, lines 41-43).

27. Referring to claim 30, Frey discloses logging transactions and defining the sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines 41-43). This is interpreted as determining if the file system operation belongs to a subset of file system operations that are subject to logging and if so, logging the file system operation.

28. Referring to claim 31, Frey teaches subset including operations such as parity update (See Col. 5, lines 41-43). A parity update will be deferent every time you perform the operation because the data is different, this is interpreted as the operation being non-idempotent.

29. Referring to claims 32 and 33, Frey teaches the log file spanning both volatile and non-volatile memory (See Col. 3, lines 31-32).

Response to Arguments

30. Applicant's arguments, see page 11 of amendment, filed October 18, 2004, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn.

31. Applicant's arguments, see page 11 of amendment, filed October 18, 2004, with respect to the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn. The examiner wishes to note that missing page 8 of the specification is now included in the case as an appendix to the response filed October 18, 2004.

32. Applicant's arguments on pages 11 and 12 of amendment filed on October 18, 2004, with respect to the 35 U.S.C. 102(b) rejection of claims 1-33 been fully considered but they are not persuasive. The applicant states that Frey does not teach the log being on a separate server from the primary server because Frey teaches each server having its own independent log file. The examiner respectfully disagrees.

Frey discloses the types of transactions including a distributed type of transaction that includes several nodes and each server maintains its own independent log, this is

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seen as each server has a log file that records all the information of the distributed transactions, which includes the transaction information that occurs on separate servers (See Col. 5, lines 53-56). The above rejections have been clarified to include this reasoning.

Conclusion

33. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (571) 272-3648. The examiner can normally be reached on Mon.-Fri. (7:30am to 4pm).

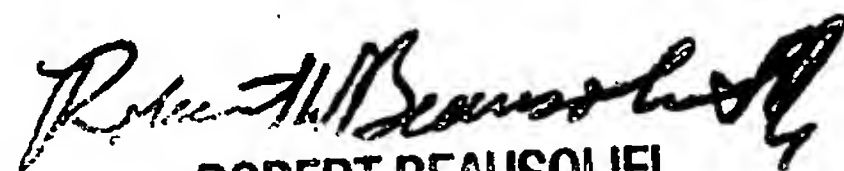
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
January 6, 2005


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